

ISO 12130-1:2021 (E)

Plain bearings — Hydrodynamic plain tilting pad thrust bearings under steady-state conditions — Part 1: Calculation of tilting pad thrust bearings

Contents

	Foreword
	Introduction
1	Scope
2	Normative references
3	Terms and definitions
4	Symbols, terms and units
5	Fundamentals, assumptions and premises
6	Calculation procedure
6.1	Loading operations
6.1.1	General
6.1.2	Wear
6.1.3	Mechanical loading
6.1.4	Thermal loading
6.1.5	Outside influences
6.2	Coordinate of centre of pressure
6.3	Load-carrying capacity
6.4	Frictional power
6.5	Lubricant flow rate
6.6	Heat balance
6.6.1	General
6.6.2	Heat dissipation by convection
6.6.3	Heat dissipation by recirculating lubrication
6.6.4	Mixing processes in the lubrication recess
6.7	Minimum lubricant film thickness and specific bearing load
6.8	Operating conditions
6.9	Further influence factors
Annex A	(informative) Examples of calculation
A.1	Example: Tilting pad thrust bearing for constant load
A.1.1	General
A.1.2	Preliminary assumptions
A.1.3	Calculation by means of the flow chart according to Figure 2
A.1.4	Heat dissipation by convection
A.1.4.1	First step
A.1.4.2	Second step
A.2	Example: Tilting-pad thrust bearing for speed-dependent load
A.2.1	General
A.2.2	Preliminary assumptions
A.2.3	Calculation by means of the flow chart according to Figure 2
A.2.4	Heat dissipation by convection
A.2.4.1	First step
A.2.4.2	Second step
A.2.5	Heat dissipation by recirculating lubrication